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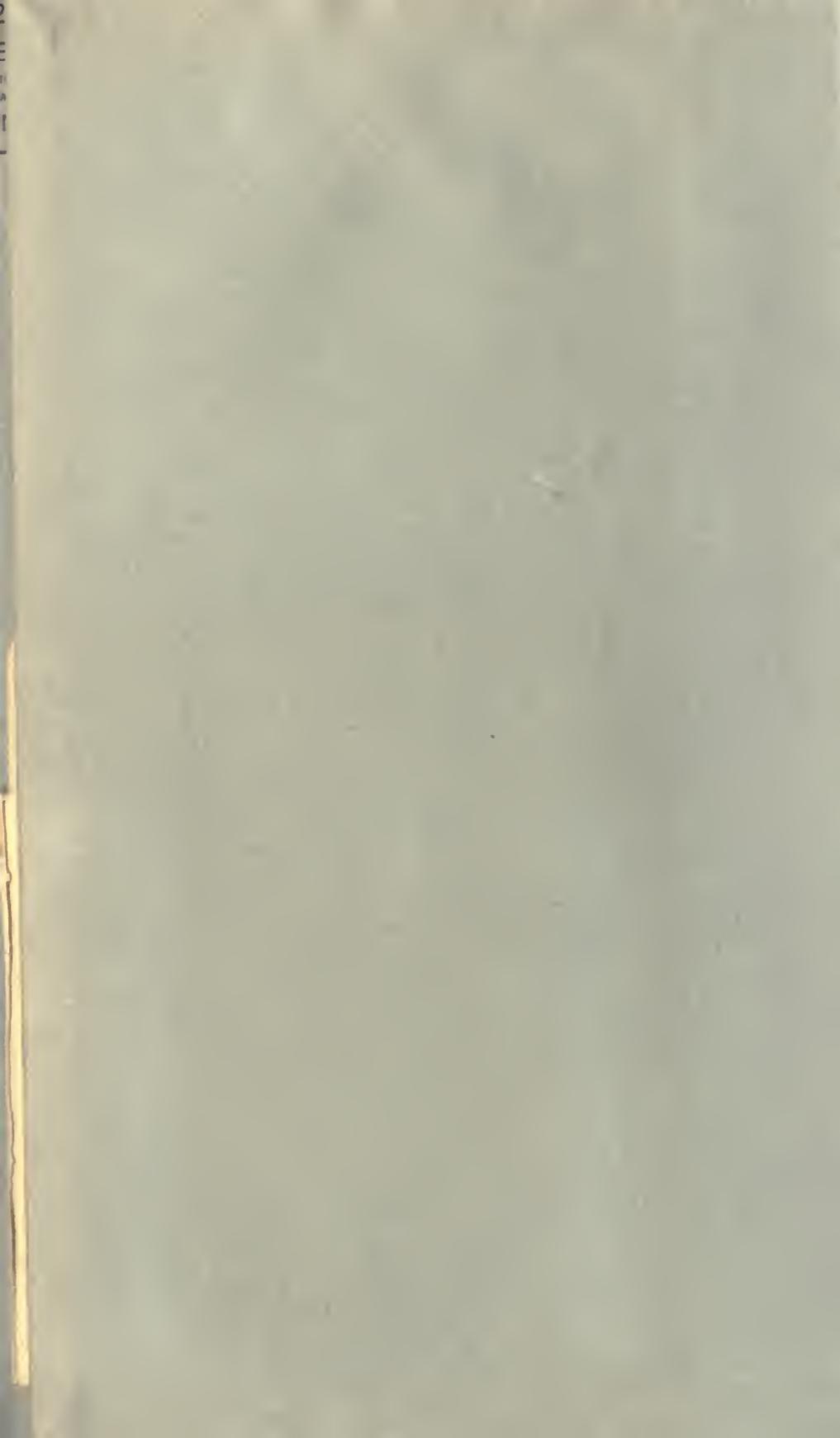


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RHYTHM
AS A DISTINGUISHING CHARACTERISTIC
OF
PROSE STYLE

BY

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ARCHIVES OF PSYCHOLOGY
EDITED BY R. S. WOODWORTH

NO. 4, JUNE 1907

Columbia University Contributions to Philosophy and Psychology, Vol. XV, No. 4

NEW YORK
THE SCIENCE PRESS

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RHYTHM AS A DISTINGUISHING CHARACTERISTIC OF PROSE STYLE

It would be difficult to find a modern Rhetoric that does not contain a few paragraphs on "the rhythm of prose." It would be just as difficult to obtain from those paragraphs a clear idea of what rhythm in prose really is. One of the most explicit statements is:¹

"Rhythm in prose may be defined as the alternate swelling and lessening of sound at certain intervals. It refers to the general effect of sentences and paragraphs, where the words are chosen and arranged so as not only to express the meaning of the writer, but also to furnish a musical accompaniment which shall at once delight the ear by its sound and help out the sense by its suggestiveness."

This writer does not tell us whether there is any regularity in the alternate swelling and lessening of sound; nor, if there is, how much. He does not say what are the means by which the rhythm of prose is produced; nor does he, or any other of the writers referred to, explain exactly what they mean by "rhythm."

When we come upon an allusion in literary criticism to an author's "rhythmical style" we commonly think of an agreeable sense of movement had in reading him. But if we ask ourselves what it is that moves, what makes the difference between a rhythmical and an unrhythmical style, or how the rhythm of one author differs from that of another, we find that our conceptions are exceedingly vague.

The writer was impelled to enter upon the present study on finding himself unable to use the concept "rhythm in prose," because of its vagueness, in a series of experiments that he had planned for determining the psychology of judgments on literary styles. He had taken, for instance, several versions of Dante's, "There is no greater sorrow than in misery to remember the happy time," and asked about thirty graduate students to arrange them in order of preference and to give reasons for first and last choice. "Because it is smooth," "Because it is rhythmical," "Like the sound of it," "Sounds rough," were among the reasons given. The question arose: What change in a sentence will make a rough one smooth or a smooth one rough?

¹ De Mille, Elements of Rhetoric. § 299.

It seemed necessary to know, what elements, of sound or of sense, go to constitute what is called the rhythm of a piece of writing.

The phenomenon of rhythm in prose was recognized by the orators and rhetoricians of Greece and Rome, and they gave definite rules for producing it. Aristotle philosophizes concerning the matter in a way suggestive of Herbert Spencer's effort in his well-known essay on style. "That composition which is entirely devoid of rhythm is indefinite," says Aristotle. "The indefinite or unlimited is displeasing and cannot be known. It ought to be limited, only not by meter like verse." "So soon as a definite measure is caught the ear waits for its return." He goes on to specify what kinds of "feet" are most suitable for prose. The "heroic" measure is not suitable because it is too solemn and too remote from the language of conversation; the "trochaic" is too light and tripping. There remains the "paeonic" rhythm, which, though used by many rhetoricians, had not been defined. It has two forms, — - - and - - - —, — the first suitable for the beginning of a sentence, the second for the end.¹ Cicero follows Aristotle in the main, and gives illustrations from his own orations.²

Recent students have found that the ancients wrote as they pleased and theory has to make the best of it. Blass has "scanned" selected passages from the classical "Kunstprosa" with the aim of disclosing the underlying rhythmical schemes. He leaves ancient theory far behind.³ Weil disputes Cicero's dictum as to the reason why a certain celebrated oratorical period was greeted with tremendous applause.⁴ Norden remarks that "in the antique conception rhythmic prose was identical with periodic."⁵

The subject of prose rhythm has received considerable attention of late years from psychologists. It has been touched upon incidentally by investigators of rhythm in general, like Bolton, Meumann, McDougal and Stetson; and directly attacked by Wallin, Marbe and Scott.

The experimental investigation of rhythm has added to our knowledge on such points as the limits within which irregularities in the time intervals between successive impressions may occur without destroying a rhythm, on the effect of the rate of succession of impressions in facilitating or hindering the arousal of a feeling of rhythm, on the availability of different kinds of impressions for

¹ Aristotle, *Rhetoric* III, 8.

² Cicero, *De Oratore*.

³ Blass, *Die Rhythmen der Attischen Kunstprosa*. Leipzig, 1901.

⁴ Weil, *Order of Words*, p. 13, tr. by Super, 1887.

⁵ Norden, *Die Antike Kunstprosa*, p. 42, 1898.

shaping into a rhythm, on the relations between rhythm-perception and physical or mental activities, and so on. But owing to the nature of the stimuli used in these experiments—simple sensations, like hammer clicks or light-flashes,—few of the detailed results can be used in the study of the rhythm of language, where the rhythmical material is so much more complex in character. There are, however, a few facts of a general nature that are significant for our purpose.

The definition of rhythm in Baldwin's dictionary seems to commit the error of identifying mere repetition with rhythm.¹ "Rhythm is a repeating series of time intervals: events which occur in such a series are said to have rhythm." We have on the other hand the statement of Bolton that a rhythm in speech means a series of *groups* of sounds.² and Ebbinghaus's that rhythm is "an organization of sensations following one another in time, by the combination of several of them into unified groups (not, as is sometimes said, the mere succession of impressions following one another in equal intervals of time)."³

We are no longer bound, in considering language rhythm, to remain within the arbitrary limits of literary metrical theory. An increase in the number of elements composing a group in a rhythmical series does not proportionally increase the apparent length of the groups.⁴ Rhythm does not depend upon equality of successive time-intervals. Only an approximate equality is necessary.⁵ Meumann has shown that intervals as long as four or five seconds are very inaccurately estimated, are merely guessed at, while reading.

Attention plays an important part in the perception of rhythm. This is especially so in the case of subjective rhythmization—the feeling of rhythm in an objectively monotonous series of impressions. Different forms of rhythm are felt according as one or another is imagined. Conversely, a rhythmical series of impressions is more easily attended to and better remembered than a structureless series.⁶

The rhythmical material may be a succession of simple sense impressions like the auditory and visual sensations employed in laboratory experiments; auditory sensations that vary in pitch as well as in loudness and duration, as in music; a series of movements as in dancing; or of sounds having meanings, as in language. There is a

¹ Dict. of Philos. and Psychol. Art. "Rhythm."

² Bolton, *Am. Journal of Psychology*, v. 6, p. 158, 1894.

³ Ebbinghaus, *Grundzuege der Psychologie*, vol. 1, p. 507.

⁴ Miner Motor, Visual and Applied Rhythms, p. 36, 1903.

⁵ Philos. Stud., vol. X, p. 404.

⁶ Mueller and Schumann. *Experimentelle Belträge zur Untersuchung des Gedächtnisses. Zeitsch. f. Psychol. und Physiol. d. Sinnesorg.* Bd. VI, 1893.

rhythm of thought distinguishable, if not separable, from the rhythm of language, controlling and supplementing the purely phonetic rhythm. In poetry, phonetic rhythm often overrides thought rhythm. In prose, phonetic rhythm is, on the whole, subordinate to thought rhythm. As the complexity of the rhythmized material increases, irregularities in the succession of the simpler stimuli are more and more disregarded.

"Rhythm appears in thought with simple perception of a number of objects," says James. "Accentuation and emphasis are present in every perception we have. We find it quite impossible to disperse our attention impartially over a number of impressions."¹ When thought moves decidedly in a definite direction under the impulse to become speech, these accentuations and emphases become more distinct. Language fixes them permanently, although they may be felt before becoming embodied in words.

An experimental investigation of speech rhythm has been made by Wallin.² His subjects spoke various pieces of prose and poetry into a phonograph. The records were then reproduced and studied by ear. Durations were measured by reacting with a telegraph key to certain sounds or pauses in the reproduced speech. Intensities and pitches were estimated and grouped by the listener. When in doubt, other listeners were substituted to check his impressions.

Although the method is open to certain objections—the noise of the stylus, and subjective errors in making the estimations, which have been pointed out by Stetson—some of the results that especially interest us here may be safely accepted. Wallin found that the chief guide in deciding whether a piece of writing was prose or verse, was the arrangement of the lines to the eye. When verse was printed as prose, or vice versa, the one was often taken for the other. The following bit of prose by Bacon was called poetry by a majority of his subjects:

To the poor Christian that sits bound in the galley,
To despairful widows, pensive prisoners, and deposed kings;
To them whose fortune runs back and whose spirits mutiny,
Unto such death is a redeemer, and the grave a place of rest.³

His subjects spoke prose more rapidly than poetry, the averages being 3.14 syllables of poetry per second, and 3.81 of prose—20 per cent. more prose. They spoke 10 per cent. more prose syllables during an expiration than poetry—5.91 of the former and 5.41 of the latter.

¹ *Principles of Psychology*, vol. 1, p. 284.

² *Researches on the Rhythm of Speech, Studies from the Yale Psychological Laboratory*, vol. IX, 1901.

³ *Ibid.*

The natural inference from these figures seems to be that equal intervals of time in prose may be filled with unequal numbers of unaccented syllables, the larger number being spoken more rapidly. Perfect rhythm, measured by perfect equality of time intervals between accents, was but slightly more common in verse than in prose.

The method employed by Scripture of measuring the physical impression on phonographic discs, although objective in a high degree, is too tedious for pieces of any length.¹ It is imperfect besides, in confusing objective magnitude with subjective impressions. An accent in language means an accent to the mind of the reader or listener, and is wholly relative to adjacent stresses, durations and pitches. A weak sound may be felt as accented if preceded and followed by weaker ones. The degree of difference that shall be judged sufficient to constitute an accent is a subjective matter. It follows, that this rigidly physical method must rely ultimately on the estimate of the listening mind, and cannot claim to be free from subjective errors.

The good, old process of "scanning," which was employed by Blass in his studies of Greek and Latin prose, has been used by Marbe on the prose of Goethe and Heine.² He began by scanning the first and second thousand words of Goethe's "St. Rochusfest" and Heine's "Harzreise" (both travel sketches), while a friend scanned the second and third thousand. The average number of unaccented syllables per interval between two accents was calculated, and the frequency of each variety of "foot" found in each thousand words. The scanning of his friend agreed sufficiently with his own to show that the differences found between Goethe's and Heine's prose were objectively there, and the results from the successive thousands showed that the characteristics of the first thousand might be expected to hold throughout each piece. It was found that Goethe's sketch had a greater number of certain kinds of feet and less of others than did Heine's, and that the average foot was shorter in the former than in the latter. Marbe then scanned a thousand words from each of half a dozen other writings of the same authors and found similar differences.

Finally, two very suggestive essays by Scott should be mentioned.³ This writer claims to have discovered two styles of vocal change within prose sentences. In one type the voice rises in pitch to the apex of an arc, is held suspended for a time, then descends; in the other it rises, begins to descend and the pause does not enter until it has

¹ Elements of Experimental Phonetics, 1902.

² *Rhythmus im Prosa*, Giessen, 1904.

³ Modern Language Association Pub. 1905.

descended by the musical interval of a fourth or a minor fourth. Scott's theory is that these inflectional arcs constitute the "feet" of prose rhythm, which are compounded in various ways. He admits that there are other rhythmical elements also, such as stress, alliteration, balance of clause and phrase, etc. Scott's observations, it appears, were made on his own reading; he gives no detailed account of them. Stetson has estimated the falling slide at the close of sentences to be an interval of a third or a fourth.¹

Phonographic recitation records enable one easily to observe the rhythm of prose. Cylinder records of Lincoln's "Gettysburg Speech," of Ingersoll on "Napoleon's Tomb" and of McKinley's "Speech at the Pan-American Exposition," are on the market,—spoken, of course, by an elocutionist. The elocutionist's artificiality mars rather than improves these pieces, but their measured character becomes obvious enough. The writer from much listening had them so impressed on his mind, that they ran through his head constantly in the elocutionist's voice, and he read them in the elocutionist's manner when he had the written copies before him. It was not difficult to mark on a copy the syllables accented in the phonograph. The rhythm of the first sentence of the Ingersoll selection, for example, is quite distinct. It is here given as marked, with accents and pauses:

A little whíle agó | I stoód at the tómb of the fírst Napóleon | a magnificent tómb of gílt and góld | where résted at lást the áshes of that réstless mán.||

No measurements or calculations were made on these specimens. The chief result of the study of them was to accustom the ear to detect beats in prose. The fact of the existence of rhythm in prose became clear and certain. It is easy to "beat time" while each of the phrases separated by the vertical lines in the above sentence is spoken.

In listening to public speakers, one is usually so interested in the meaning of the discourse that one does not observe the rhythm of its sound, but if the language is a foreign one and unintelligible there is nothing but the sound to attend to, and its rhythmical character becomes apparent. The writer listened to a sermon of which he did not understand a word, in the Russian church in New York. He was able to beat time for short stretches, though constantly thrown out at pauses, where the movement broke up and varied. But the delivery

¹ Harvard Psychol. Studies, 1903.

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of some American public speakers is so markedly rhythmical as to become annoying in its unvaried chant. With a little effort, it is possible to abstract the attention from the meaning of what is said and beat time. The writer has done it very often.

That authors of marked individuality of style differ from one another in the quality of rhythm is a commonplace of literary criticism. Every sensitive reader feels the difference between such writers as Scott and Stevenson, Macaulay and Carlyle, De Quincey and Emerson, Dickens and Thackeray, Spencer and Huxley. What is at the bottom of these differences? In poetry different rhythms are produced by various metrical forms that may be schematically exhibited. Can anything like this be done for prose?

The following experiment to test this question was made. A number of mimeograph copies were made of selections from Scott, Stevenson, Thackeray, Carlyle, Ruskin, Hawthorne and Lotze (translation). The selections were arranged as if by one author in consecutive paragraphs, each of about 130 words. One person read aloud while another marked the syllables that to his hearing were accented. Six markings were thus obtained. In going over the copies afterwards, three or more marks on a syllable were considered an accent.

The most surprising result of the experiment was that only one of the persons engaged in it was sure, when asked, that the selections were by different authors. The others had not noticed the fact. One declared they were by the same author. The selections had, of course, purposely been chosen so as to be on congruous topics.

More syllables were marked towards the close than at the beginning, showing that the discriminativeness of the markers increased as they proceeded. There was a high degree of agreement among the markers but the selections differed from one another in the proportion of unaccented to accented syllables.

A couple of sentences with the markings gathered from the several sheets are here given:

1 5 5 4 4 1 5
You might sooner get lightning out of incense smoke than true
4 6 5 4 6
action or passion out af your modern English religion. You had
5 4 6 5 3 4 3 2
better get rid of the smoke and the organ pipes both, leave them
5 6 5 6 6 3
and the Gothic windows and the painted glass to the property man,
5 1 3 4 6 1 4 5
give up your carburetted hydrogen ghost in one healthy expiration
2 6 5
and look after Lazarus at the door-step.

The agreement is close enough to justify the assumption that the scanning of one individual having "a good ear," would be just as valid for the practical purpose in view as the result obtained by add-

ing markings of several persons. There is considerable variation in the scanning of good poetry by scholars. These individual variations, however, are insignificant beside the large differences due to different types of rhythm, like blank verse and hexameter, shown by the scanning of all alike. One person's scanning of a number of poetical specimens would be sure to show these typical differences, however it might vary in detail from the scanning of another. The assumption is that if there are distinct rhythmical types in prose, the same procedure there should give valid results.

The term "scanning" applied to prose obviously does not mean quite the same process as that gone through by the school-boy who scans Virgil. The school-boy is taught that the poetry he is to scan consists of two kinds of syllables arranged according to definite rules and his task is to find how each line conforms to the given pattern. The pattern being flexible within definite limits, the boy's ingenuity is expended in accounting for seeming irregularities in the line before him. But we never are provided with a ready-made pattern for any piece of prose. Scanning prose, then, must mean marking accents wherever we feel them. Here a certain amount of vagueness enters. Not having a pattern to guide us, which accents shall we mark? For there are accents of various degrees of intensity.

A good poem sets the tune in the first line so unmistakably that the succeeding lines, even though they be somewhat uncertain rhythmically, are drawn by the reader into the rhythm suggested at the beginning.¹ Prose has no lines like those of poetry, and its rhythmical units certainly do not follow each other with any such regularity as do the lines of poetry. Nevertheless, a phrase in prose frequently suggests a rhythm as distinctly as does a line of poetry, and rhythms are echoed in prose as in verse.

The tendency to accommodate the time of a syllable in prose to fit the movement of the phrase in which it occurs, may be shown by a simple experiment. Give a person the sentence, "You are a wicked man," to read aloud, and then, "You are a bad man." There will be a distinct lingering on the word "bad." So in the second of the sentences, "How do you do this morning?" and, "How do you do this morning?" where the first "do" is emphasized, "you" is prolonged. There may be a shifting of accent from one syllable to another, as may be seen on comparing the two sentences, "That judgment was unjust," and "It was an unjust judgment." In the first, "unjust" is accented on the second syllable; in the second, on the first.²

¹ Lanier, *Science of Eng. Verse*, p. 10, 1880.

² Lewis, C. M., *Principles of Eng. Verse*, p. 1, 1906.

In order to determine whether various prose styles differ from one another in accentual rhythm the method of scanning was employed, as follows: A thousand words (or more, if needed to reach a full stop) were counted from the works of different authors, and "scanned" by the writer. The whole number of syllables was counted, also the accented and the unaccented syllables. The average number of unaccented syllables between a pair of accented syllables was calculated. Then the frequency of each type of "foot" was counted;—that is, the number of times the combination— —, — - —, — - - —, — - - - — etc., occurred. Sentence stops were disregarded. The procedure here described, it will be seen, is the same as that employed by Marbe.

To illustrate: The first 1,004 words of Cooper's *Red Rover* contained 1,593 syllables, 498 were accented in scanning, 1,095 were left unaccented,—average unaccented interval 2.20 syllables, average deviation .99, average word 1.59 syllables. The distribution of groups or "feet" was as follows:

| | |
|-----------------|-----|
| — — | 33 |
| — - — | 120 |
| — - - — | 153 |
| — - - - — | 116 |
| — - - - - — | 57 |
| — - - - - - — | 15 |
| — - - - - - - — | 3 |

Since the number of syllables in the different selections scanned varied, distributions were calculated for a common base of 1,000 syllables. The above accordingly gave:

| | |
|-----------------|-------|
| — — | 20.75 |
| — - — | 75.48 |
| — - - — | 96.23 |
| — - - - — | 72.96 |
| — - - - - — | 35.85 |
| — - - - - - — | 9.43 |
| — - - - - - - — | 1.88 |

Table I gives the frequencies of the various types of "foot" for 35 specimens scanned by the writer. The figures over the columns indicate types of "foot": 0 = — —, 1 = — - —, 2 = — - - —, 3 = — - - - —, etc. In the left-hand column of the Table are given authors and titles. These are in full:

| | |
|-----------|--|
| COOPER | Red Rover |
| BARRIE | Little Minister |
| STEVENSON | Old Pacific Capital |
| KIPLING | In the Matter of a Private Incarnation of Krishna Mulvaney Man Who Was |

| | |
|-------------|--------------------------------------|
| JAMES, H. | Watch and Ward |
| HOWELLS | The Ambassadors |
| DICKENS | The Lady of the Aroostook |
| RUSKIN | Landlord at Lion's Head |
| MILTON | Nicholas Nickleby |
| BROWNE | Modern Painters |
| ADDISON | Sesame and Lilies |
| JOHNSON | Tenure of Kings and Magistrates |
| DE QUINCEY | Urn Burial |
| CARLYLE | Essay on Milton |
| MACAULAY | Essay on Shakespeare |
| LAMB | Essay on Shakespeare |
| EMERSON | Hero Worship: Shakespeare |
| HOLMES | Boswell's Life of Johnson |
| BURKE | Old and New Schoolmaster |
| WEBSTER | Nature |
| INGERSOLL | Autocrat of the Breakfast Table |
| THE TIMES | On Conciliation With America |
| THE JOURNAL | Character of Washington |
| THE TIMES | Heretics |
| SPENCER | Editorial |
| HUXLEY | Editorial |
| DARWIN | Report of an Accident |
| JAMES, W. | Principles of Psychology |
| TENNYSON | Physiography, Chap. I |
| | Preface to the above |
| | Expression of Emotions |
| | Principles of Psychology: Habit |
| | The Princess: Prologue (blank verse) |

TABLE I.

| | (0) | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|-----------------|-------|--------|--------|-------|-------|-------|------|------|-----|
| COOPER | 20.75 | 75.48 | 96.23 | 72.96 | 35.85 | 9.43 | 1.88 | | |
| BARRIE | 36.34 | 120.08 | 98.75 | 54.30 | 24.49 | 10.27 | 2.37 | | |
| STEVENSON | 39.49 | 140.01 | 76.10 | 85.44 | 16.51 | 3.59 | .71 | | |
| KIPLING— | | | | | | | | | |
| I. M. P. | 43.72 | 126.30 | 100.63 | 60.37 | 22.90 | 5.55 | .69 | .69 | |
| I. K. M. | 29.48 | 97.15 | 106.53 | 61.64 | 26.80 | 8.71 | .67 | | |
| M. W. W. | 25.92 | 93.96 | 93.96 | 63.30 | 28.51 | 8.42 | 5.81 | .64 | |
| JAMES, H.— | | | | | | | | | |
| W. W. | 30.91 | 108.54 | 102.36 | 68.01 | 24.73 | 6.87 | .68 | | |
| Amb. | 31.32 | 95.35 | 112.05 | 61.24 | 23.66 | 11.13 | 2.08 | | |
| HOWELLS— | | | | | | | | | |
| L. A. | 18.92 | 87.62 | 91.13 | 72.90 | 27.33 | 9.81 | 3.50 | 1.50 | .70 |

| | (0) | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|----------------------|-------|--------|--------|-------|-------|-------|-------|-------|------|
| L. L. H. | 16.60 | 84.47 | 109.74 | 69.31 | 26.71 | 6.49 | 2.16 | .72 | |
| DICKENS | 29.88 | 118.19 | 95.61 | 63.08 | 26.56 | 5.97 | .66 | | |
| RUSKIN— | | | | | | | | | |
| M. P. | 52.54 | 141.29 | 87.33 | 66.74 | 16.33 | 7.10 | 1.42 | | |
| S. L. | 30.73 | 95.53 | 96.79 | 64.09 | 30.73 | 9.15 | .65 | | .65 |
| MILTON | 28.93 | 107.00 | 78.74 | 82.10 | 26.24 | 6.73 | .67 | | |
| BROWNE | 24.58 | 112.69 | 116.11 | 62.83 | 21.85 | 4.78 | .68 | | |
| ADDISON | 19.96 | 88.87 | 89.51 | 66.33 | 36.06 | 8.37 | 3.86 | | |
| JOHNSON | 8.56 | 77.72 | 87.51 | 78.94 | 37.94 | 6.73 | 3.06 | | |
| DE QUINCEY | 16.83 | 89.76 | 92.56 | 64.51 | 38.14 | 8.97 | 2.24 | | .56 |
| CARLYLE | 33.36 | 116.45 | 102.83 | 63.33 | 19.06 | 6.81 | 2.72 | .68 | |
| MACAULAY | 20.86 | 73.67 | 87.36 | 73.02 | 29.34 | 11.08 | 4.56 | 3.91 | |
| LAMB | 17.95 | 85.42 | 100.27 | 60.04 | 33.42 | 11.14 | 2.47 | .61 | |
| EMERSON | 23.76 | 106.24 | 111.14 | 65.00 | 23.06 | 9.08 | | | |
| HOLMES | 22.04 | 89.58 | 105.93 | 63.99 | 27.72 | 8.53 | .71 | 1.42 | .71 |
| BURKE | 15.31 | 75.28 | 98.25 | 74.00 | 33.81 | 9.57 | 1.91 | | |
| WEBSTER | 26.78 | 87.22 | 88.46 | 71.02 | 31.77 | 8.09 | 3.73 | .62 | .62 |
| INGERSOLL | 26.67 | 135.48 | 91.26 | 55.45 | 28.78 | 7.72 | 1.40 | | |
| THE Times | 17.44 | 81.61 | 96.56 | 64.79 | 33.64 | 9.34 | 3.11 | 1.24 | .62 |
| THE Journal | 26.22 | 113.16 | 101.43 | 61.41 | 23.46 | 5.52 | 3.45 | 1.38 | |
| THE Times, R. | 35.00 | 93.60 | 98.93 | 78.38 | 22.83 | 3.80 | 2.28 | | |
| SPENCER | 20.36 | 51.45 | 75.04 | 63.78 | 34.30 | 23.58 | 5.89 | 3.21 | 1.07 |
| HUXLEY— | | | | | | | | | |
| Phys. Ch. I. | 38.30 | 111.55 | 120.96 | 57.12 | 22.84 | 4.69 | | | |
| Pref. | 20.46 | 84.28 | 105.35 | 65.61 | 34.31 | 5.41 | 4.21 | | |
| DARWIN | 34.59 | 91.20 | 111.96 | 66.04 | 23.27 | 7.54 | 1.25 | | .62 |
| JAMES, W. | 28.42 | 93.86 | 116.99 | 65.43 | 23.13 | 7.27 | 1.32 | | |
| | | | | | | | | | |
| "THE PRINCESS" | 22.68 | 286.52 | 28.72 | 65.01 | 6.04 | 2.26 | .75 | | |
| AVERAGES | 26.85 | 98.52 | 98.95 | 66.81 | 27.53 | 8.80 | 2.11 | | |
| (excluding the last) | | | | | | | | | |

Table II gives the average unaccented interval in syllables, the average deviation from this average, and the average word-length in syllables, for each of the selections.

TABLE II.

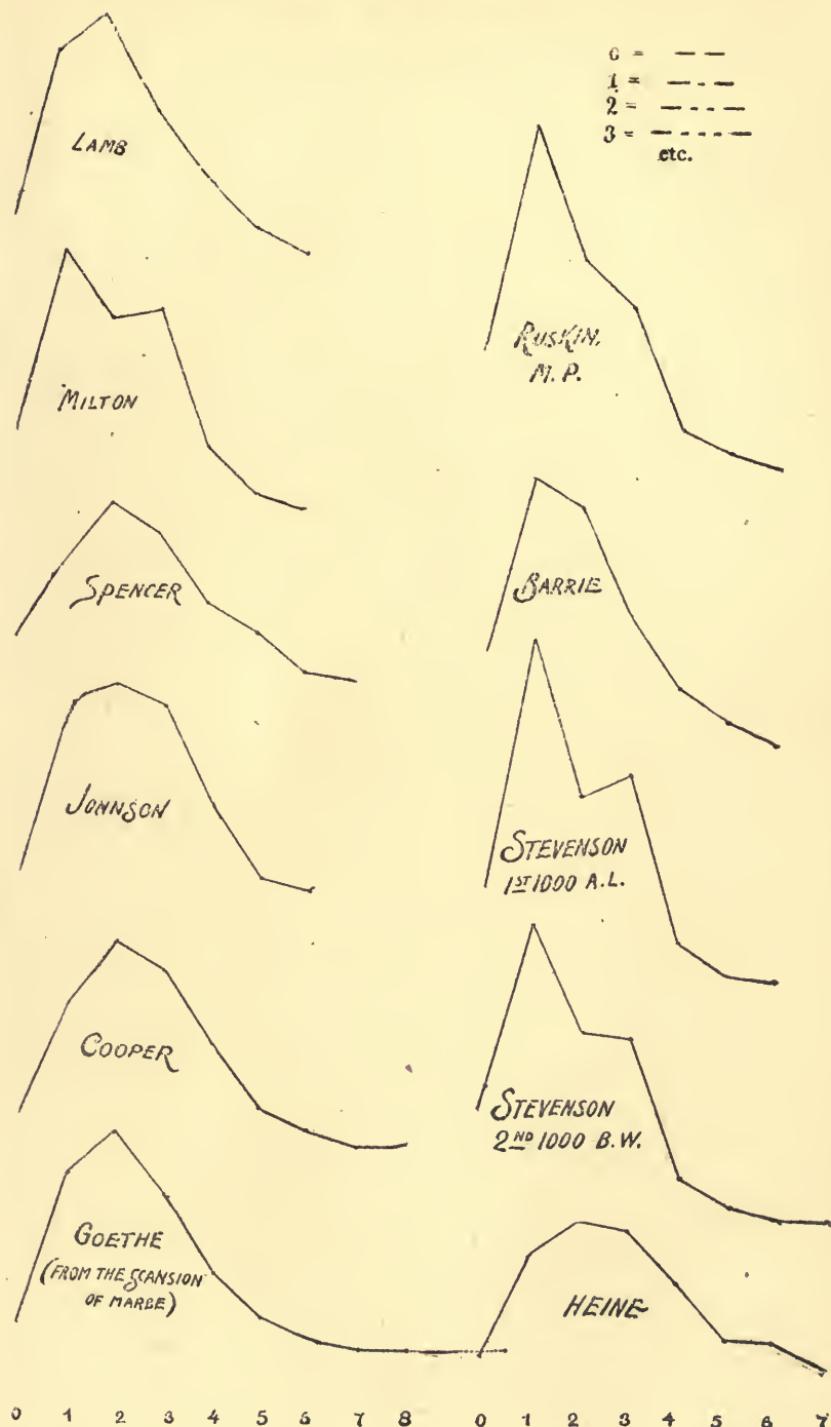
| | Av. Int. | A. D. | Av. W. |
|-----------------------|----------|-------|--------|
| COOPER | 2.20 | .99 | 1.58 |
| BARRIE | 1.87 | .98 | 1.26 |
| STEVENSON | 1.76 | .97 | 1.37 |
| KIPLING—I. M. P. | 1.77 | .95 | 1.40 |
| I. K. M. | 1.97 | .91 | 1.43 |
| M. W. W. | 2.09 | 1.02 | 1.52 |
| JAMES, H.—W. W. | 1.91 | .92 | 1.44 |
| Amb. | 1.96 | .92 | 1.42 |
| HOWELLS—L. A. | 2.18 | .98 | 1.42 |
| L. L. H. | 2.13 | .90 | 1.38 |

| | | | |
|-------------------------------|------|------|------|
| DICKENS | 1.89 | .94 | 1.46 |
| RUSKIN—M. P. | 1.67 | .98 | 1.35 |
| S. L. | 2.01 | .96 | 1.46 |
| MILTON | 1.99 | .93 | 1.47 |
| BROWNE | 1.89 | .85 | 1.43 |
| ADDISON | 2.17 | 1.02 | 1.50 |
| JOHNSON | 2.31 | 1.00 | 1.59 |
| DE QUINCEY | 2.17 | 1.01 | 1.66 |
| CARLYLE | 1.87 | .94 | 1.44 |
| MACAULAY | 2.29 | 1.30 | 1.51 |
| LAMB | 2.19 | 1.00 | 1.50 |
| EMERSON | 1.95 | .85 | 1.42 |
| HOLMES | 2.08 | .94 | 1.39 |
| BURKE | 2.24 | .97 | 1.56 |
| WEBSTER | 2.13 | 1.13 | 1.53 |
| INGERSOLL | 1.85 | .96 | 1.40 |
| THE <i>Times</i> , Ed. | 2.23 | .99 | 1.54 |
| THE <i>Journal</i> , Ed. | 1.93 | .93 | 1.44 |
| THE <i>Times</i> , R. | 1.95 | .93 | 1.42 |
| SPENCER | 2.56 | 1.01 | 1.76 |
| HUXLEY—Ch. I. | 1.80 | .88 | 1.42 |
| Pref. | 2.13 | .95 | 1.63 |
| DARWIN | 1.95 | .91 | 1.57 |
| JAMES, W. | 1.97 | .88 | 1.50 |
| "THE PRINCESS" | 1.40 | .71 | 1.29 |

A cursory glance at Table I shows that each selection has a foot of maximum frequency, either (1) or (2); that the curves rise more steeply than they descend; that there is considerable variety of shape in the curves. A few typical ones have been plotted and are given in the accompanying charts. The points to be noted are: the acute and the rounded summit, the steep and the gradual descent, the summit in (1) and the summit in (2), the double apex or dip (Milton and Stevenson).

Before proceeding to discuss the figures presented in the preceding tables, it will be desirable to give some evidence of their reliability; first, as measures of objective fact; second, as typical of the whole work from which each selection was taken.

The first thousand words of Cooper's "Red Rover" were scanned by two persons besides the writer. Both were students at Teacher's College, Columbia University, but one had never scanned poetry. The numerical results are given, together with those from the writer's scansion, for comparison, in Table III.



0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7

TABLE III.

| COOPER'S "Red Rover." (1st 1,000 words.) | | | | | | | | |
|--|-------|-------|-------|-------|-------|-------|----------|-----------|
| (0) | (1) | (2) | (3) | (4) | (5) | (6) | Av. Int. | A. D. |
| A. L. | 20.75 | 75.48 | 96.23 | 72.96 | 35.85 | 9.43 | 1.88 | 2.20 .99 |
| M. R. | 25.82 | 79.37 | 98.12 | 71.25 | 33.12 | 8.75 | 2.50 | 2.13 .99 |
| L. T. | 8.75 | 56.25 | 82.50 | 71.25 | 40.62 | 14.37 | 6.25 | 2.54 1.09 |

The agreement between the first two is close. The third varies from the other two, but it will be noticed that the maximum is in the same column. The low number in column (0), and the high numbers in columns (5) and (6), indicate that this person omitted a great many accents that were marked by the first two.

Stevenson's "Old Pacific Capital" was scanned by C. W., who had never scanned poetry. The next table gives the result, together with the corresponding figures from Table I. C. W. scanned the *second* thousand words; A. L. the *first* thousand.

TABLE IV.

| STEVENSON'S "Old Pacific Capital" (1st & 2nd 1,000). | | | | | | | | |
|--|-------|--------|-------|-------|-------|------|----------|----------------------|
| (0) | (1) | (2) | (3) | (4) | (5) | (6) | (7) | Av. Int. A.D. Av. W. |
| A. L. | 39.49 | 140.01 | 76.10 | 85.44 | 16.51 | 3.59 | .71 | 1.76 .97 1.37 |
| C. W. | 57.67 | 122.46 | 79.74 | 76.18 | 18.51 | 7.12 | .71 1.42 | 1.74 .98 1.38 |

The two sessions give widely divergent figures in columns (0) and (1). Now, it will be observed that the number of (0)'s marked by C. W. is far in excess of that given for any writer by A. L. in Table I. It is also more than double the number marked by M. R. in the Cooper selection. It seems a fair inference that C. W. was abnormal in accenting successive syllables. C. W.'s manner of speaking supports this inference. It is slow and deliberate, with strong emphasis, always noticed by new acquaintances. If we throw in a few unaccented syllables here and there so as to reduce (0) to more normal size, (1) will rise proportionally. It should be noticed that the high frequency of (1) and the relatively high frequency of (3) appear in both records.

Henry James' "Watch and Ward" was scanned by K, graduate student of English.

TABLE V.

JAMES' "Watch and Ward" (*same section*).

| (0) | (1) | (2) | (3) | (4) | (5) | (6) | A. Int. | A. D. |
|------------|-------|--------|--------|-------|-------|------|---------|----------|
| A. L. | 30.91 | 108.54 | 102.36 | 68.01 | 24.73 | 6.87 | .68 | 1.91 .92 |
| K. | 33.61 | 109.07 | 93.98 | 66.54 | 26.06 | 8.91 | 1.37 | 1.92 .97 |

We observe here that the maxima are in the same column and the general agreement good. A piece of prose having a large excess of one kind of "foot," we may assume, will have a different rhythmical character from one with an excess of another kind. Its rhythm will be greatly colored by the predominant type. Hence agreement among different markers in marking the most frequent "foot," indicates agreement in feeling the predominant rhythm.

The most frequent "foot," it has been noted, is always in column (1) or (2). These two intervals are radically of different type. Foot (1) is two-rhythm—iambic or trochaic; foot (2) is three-rhythm—anapaestic or dactyllic. Foot (3), on the other hand, may be the result of negligence in marking foot (1), as a little consideration will show. Similarly, foot (4) may be due to neglect of adjacent (1)'s and (2)'s, and foot (4), to neglect of successive (2)'s. One would expect the scansion of an inexperienced person to show a greater number of the long intervals than the scansion of a person who had marked a large number of pieces. The scansion of three of the markers illustrates this point. But the opposite may happen. The inexperienced marker may mark too minutely, marking word-accents instead of sentence-accents. This seems to have been done by (M. R.).

As to the extent to which the figures in Table I may be taken to be typical for the piece of writing as a whole from which each selection of a thousand words was taken, some evidence will be found in Table VI and VII.

Each of the selections named in the first column of Table VI was divided in half, and the different types of foot in each half were counted just as they had been in the wholes. The halves ranged in size between seven and eight hundred syllables. The figures in the table have been reduced to a common denominator of 500.

In Table VII are given the figures resulting from L. T.'s scansion of the *first* and *second* consecutive thousand words of Cooper's "Red Rover."

TABLE VI.

| | (0) | (1) | (2) | (3) | (4) | (5) |
|-----------------------|-----|-----|-----|-----|-----|-----|
| KIPLING—I. K. M. | 17 | 47 | 59 | 36 | 10 | 3 |
| | 13 | 54 | 52 | 28 | 24 | 5 |
| RUSKIN—S. L. | 15 | 49 | 51 | 31 | 15 | 3 |
| | 15 | 46 | 45 | 33 | 15 | 5 |
| MILTON | 19 | 52 | 37 | 50 | 10 | 3 |
| | 10 | 58 | 44 | 35 | 16 | 3 |
| BROWNE | 15 | 57 | 60 | 30 | 13 | 2 |
| | 9 | 55 | 56 | 32 | 8 | 2 |
| CARLYLE | 13 | 57 | 55 | 29 | 8 | 2 |
| | 19 | 66 | 47 | 34 | 10 | 4 |
| LAMB | 11 | 46 | 50 | 29 | 17 | 4 |
| | 6 | 38 | 49 | 30 | 16 | 6 |
| EMERSON | 10 | 58 | 56 | 30 | 9 | 6 |
| | 13 | 49 | 55 | 35 | 14 | 2 |
| INGERSOLL | 12 | 73 | 42 | 26 | 15 | 4 |
| | 14 | 61 | 48 | 29 | 13 | 3 |
| SPENCER | 10 | 24 | 39 | 30 | 15 | 11 |
| | 9 | 27 | 35 | 33 | 19 | 12 |
| HUXLEY—Pref. | 10 | 37 | 50 | 31 | 15 | 2 |
| | 8 | 37 | 43 | 27 | 15 | 2 |

TABLE VII.

COOPER'S "Red Rover" (L. T.).

| (0) | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---------------------|-------|-------|-------|-------|-------|------|-----|
| 1st. 1,000.....875 | 56.25 | 82.50 | 71.25 | 40.62 | 14.37 | 6.25 | |
| 2nd. 1,000.....6.79 | 56.23 | 78.48 | 69.83 | 42.02 | 19.15 | 4.32 | .61 |

Let us now return to Table I. The selections were taken from authors of the most diverse styles. There was, of course, no need of establishing the fact of the *widest* diversities by experiments in appreciation. That Stevenson's style, for example, is extremely different from Cooper's will be disputed by no one. Innumerable printed opinions have given expression to this judgment. A similar consensus of opinion may be confidently assumed as to the fact of diversity between such styles as that of Ruskin's "Modern Painters" and that of Lamb's "Essays of Elia," between Burke and Ingersoll, between Herbert Spencer and William James, between Addison and Carlyle, between the *Times* and the *Journal*.

The figures in the table, so far as these very dissimilar styles are concerned, at least, vary in sympathy with the estimate of literary criticism. Carlyle and Addison are a strongly contrasted pair. The epithets applied most often to Carlyle's style are "vigorous" and

“emphatic,” while Addison’s writing is characterized as “smooth” and “urbane.” To a person scanning styles such as these two, the difference is felt to be one between strong or distinct, and weak and vague accentuation. One scanning a vaguely accentuated style will pass over a relatively large number of syllables without marking an accent. In a strongly accentuated style the accents marked are numerous and close together. This is shown in the table by the great excess of (4)’s, (5)’s and (6)’s in Addison over Carlyle, and the excess of (0)’s in Carlyle over Addison.

Similar differences may be seen in the table between Burke and Ingersoll, Spencer and James, Cooper and Stevenson, the *Times* and the *Journal*. Comparing the figures in column (0) with one another, and those in columns (4), (5), and (6), we should class Lamb, De Quincey, Johnson and Howells with Addison; and Barrie, Kipling, Browne, H. James, Ruskin M. P., with Carlyle.

We now pass to consider columns (1) and (2). These two columns, as has been remarked before, represent radically different types of rhythm. “Iambic” or “trochaic” with reference to (1), and “anapaestic” or “dactyllic” with reference to (2), are objectionable terms; both because no distinctions between “iambic” and “trochaic,” or “anapaestic” and “dactyllic” were made in scanning, and because these terms carry implications of classical prosodic theory that are inapplicable. The term “duple” for the shorter foot, and “triple” for the longer, will be used. Each of these may be again characterized, if necessary, as “rising” or “falling,” according as the accent comes last or first in the foot.

Taking two contrasted styles like Ruskin’s “Modern Painters” and Lamb’s “Essays,” we note that the one has a large excess of (1)’s over (2)’s, the other of (2)’s over (1)’s. Ruskin’s style, then, we should say is markedly duple in this selection; Lamb’s triple. For similar reasons we would affirm that the styles of Stevenson, Barrie, Dickens, Milton, Carlyle, Ingersoll, the *Journal*, Kipling’s “In the Matter of a Private,” exhibit marked duple rhythm; while Huxley, Darwin, W. James, H. James in “The Ambassadors,” Howells, Holmes, Kipling in “The Incarnation of Krishna Mulvaney,” have a predominant triple rhythm. The degree of duple or triple should be estimated by the degree of excess of (1)’s over (2)’s or vice versa. But low amounts of both (as in the case of Spencer) even though there be a considerable excess of one over the other cannot constitute a rhythm, for they may both be scattered throughout the piece of writing as isolated groups of syllables, not as groups of “feet.” Large amounts of both, on the other hand (as in the case of Browne), even though neither predominate, indicate rhythm, a mingling or alternation of duple and triple.

DISTRIBUTION OF FEET FOR ABOUT 400 WORDS.

COOPER: R. R.



STEVENSON: O. P. C.



RUSKIN: M. P.



MACAULAY: E. on B.



BARRIE: L. M.



DISTRIBUTION OF FEET FOR ABOUT 400 WORDS.

(Continued)

COOPER: R. R.



STEVENSON: O. P. C.



RUSKIN: M. P.



MACAULAY: E. on B.



BARRIE: L. M.



In the best of duple rhythms there will be found a certain amount of (2)'s. "The Princess," which is duple rhythm by a great artist, is instructive on this point. Some of the (2)'s there are due to syllables intended to be hurried or slurred in reading. Others arise from the substitution here and there of a duple falling for a duple rising foot—a permissible procedure in blank verse—which brings the unaccented syllables of two feet together. Amid triple rhythm, by the opposite process of lengthening syllables, duple feet may be inserted without breaking the rhythm.

The figures in column (3) are to be interpreted in two ways. They indicate partly failure to mark accents in successive duple feet. This point, too, is illustrated in "The Princess." It probably accounts for the large number of (3)'s in Milton and Stevenson. But (3)'s to a large extent constitute a distinct type of rhythm. It will be remembered that Aristotle recommended this type, which he called the "paeonic," as the most suitable for prose. A few phrases of English from the selections that were scanned will show the character of this foot.

In the first from Macaulay's "Boswell," the (3)'s are alternated quite regularly with other intervals:

All the capr̄̄ces of his t̄mper, áll the illú̄sions of his vánity, áll his cástles in the áir.

The next is from Johnson:

He sácr̄̄fices vŕ̄̄tue to convénience.

And this from Burke:

If ánything were wánting to this nécessary opérátion of the fórm of góvernment, relígióñ would have gíven it a compléte efféct.

This type of foot seems to be comparatively numerous in Burke, Webster, Johnson, Macaulay, The *Times* reporter, and "The Lady of the Aroostook."

Column (4) has already been discussed in connection with column (0). It does not represent a distinct type, but is a resultant of weak and vague accentuation, or may be resolved into shorter feet. The same may be said of the columns beyond (4).

The assumption has been made once or twice above that a large amount of a particular type of foot in a piece of writing indicates the presence of a rhythm of that type. The assumption may be tested by actual counting. This was done for portions of a few of the selections. The first 200 feet of Stevenson, Barrie, Ruskin (M. P.), Cooper and Macaulay were plotted and counted in the following manner:

A dot was placed one unit above the base line for each foot of type (0), 2 units above for every (1), 3 above for every (2), etc., separated horizontally by units of space. Starting at the beginning of the

selection, each foot was given a dot on its appropriate altitude, the dots succeeding each other in the same order as the feet in the prose. The dots were connected by straight lines. The same type of foot repeated, gave an unbroken horizontal line. A change from one type to another appeared as an oblique line. By counting the dots in the horizontal lines at any altitude we get a measure of the amount of rhythm of that type. Single occurrences appear in the diagram as angles.

The count gave the following results:

TABLE VIII.

| | Duple Rhythm per cent. | Triple Rhythm per cent. |
|-----------------|---------------------------|----------------------------|
| STEVENSON | 26 | 5 |
| BARRIE | 18 | 12 |
| RUSKIN | 22 | 4 |
| MACAULAY | 12.5 | 13 |
| COOPER | 8 | 13.5 |

In the Stevenson prose, that is to say, 26 per cent. of all the feet occurred in groups of two or more, and were of the duple type; 5 per cent. occurred in groups of two or more and were of the triple type. In Cooper's prose the duple feet that occurred in groups of two or more were only 8 per cent., while the triple feet so occurring were 13.5 per cent. of all the feet. The 200 feet that were counted comprised about 400 words.

It should be observed that although the method of counting above described probably gives a fair comparative measure of the amount of rhythm in each passage, it by no means gives an absolutely correct measure. The angles in the diagram may form parts of a complex rhythmical pattern. The intrusion of feet of diverse types is frequent, as we have seen, even in poetry which is theoretically all in one rhythm. A regular alternation, besides, may be rhythmical as well as a uniform repetition. Each alternating pair then forms one complex group which is repeated. A phrase like this of Ruskin's, for instance:

"into fantástic sémblances of fórtress tówers,"

would not give a horizontal line in the diagram, but it appears to be rhythmical.

Our next inquiry is whether a writer can be known by his rhythm, as measured in Tables I and II, in everything he writes. The list of works scanned includes two by Ruskin, three by Kipling, two by Höwëlls, two by James, and two by Huxley—(the first chapter and the preface).

Ruskin's "Modern Painters" differs very much in Table I from his "Sesame and Lilies." The one is highly accentuated, with a great number of duple feet, the other shows moderate accentuation, with a slight preponderance of triple feet, and more than the average of both (4)'s and (0)'s which is exceptional. These figures seem to conform to the impression made by the two styles on at least one reader. The passage from "Modern Painters" is extraordinary prose—a description of sun-rise in the Alps and a palpable effort at rhythmical writing. "Sesame and Lilies" is didactic, a homily to young ladies on their duties and privileges. The one almost breaks into song; the other is uneven and spasmodic.

Kipling's three stories show three different types of rhythm—double, triple and mixed. Readers of Kipling will not be surprised at this. There may be characteristics in his style that would enable one to distinguish his work from another writer's without knowing the authors, yet nothing could be plainer than that some of his stories move very differently from others. Compare for instance two such extreme kinds as "The Big Drunk Draf" with "An Habitation Enforced."

Huxley's Chapter I shows a greater amount of accentuation than his Preface, though the predominant type of rhythm is the same in both. The two selections differ in the character of their matter. The Preface discusses the place of Physiography as a science, its importance in an educational curriculum and the best ways of teaching it. The thought is strong, the vocabulary abstract and polysyllabic. It is addressed to men of science. In Chapter 1, technicalities are abandoned and the author faces the task of instructing the average man in the elements of science. The movement becomes comparatively light and rapid.

The extracts from both Howells and Henry James were chosen with the view of testing whether there had been a change of style from early to late works. The critics make much of a difference in Henry James' style. The table shows that there has been a change from duple rhythm in "Watch annd Ward" to triple rhythm in "The Ambassadors." The average foot has lengthened slightly; the average deviation is exactly the same; the average word is a trifle shorter. The relatively high number of (5)'s indicates greater vagueness of accentuation. The change from predominant duple to predominant triple rhythm despite the slightly shortened word length is significant, for it shows that the change has been brought about by other means—word-arrangement, or thought-form.

Howells' later work, "The Landlord at Lion's Head," shows a greater amount of triple rhythm than his earlier, "Lady of the Aroostook." The average foot, the average deviation and the average

word have nevertheless all decreased. There are fewer (3)'s, (4)'s, (5)'s and (6)'s. All these facts seem to indicate, that Howells' style has become more decidedly triple rhythmically, and in general more clean-cut and distinct.

It appears from these comparisons that a writer's style is not the same rhythmically in different works, whether of the same or of different periods of his career. And this generalization based upon a count, from which the possibility of subjective error is indeed not excluded, is confirmed by the purely objective test of the average word-length. The difference in this respect between Huxley's Preface and his Chapter I is considerably greater than that between either of these and the selections from Darwin or Prof. James. The difference between Kipling's "In the Matter of a Private" and his "Man Who Was," in word-length, is greater than that between the former of these and Lamb or Macaulay. A greater difference, moreover, is shown by this objective test between the above-mentioned stories of Kipling, than between the two by Howells, or the two by James, although a period of over twenty years elapsed between the writing of each of these pairs.

Table I shows no agreement among writings of the same *genre*, excepting the group of scientists. Novelists and essayists display all varieties of accentuation and rhythm. Ingersoll differs markedly from his fellow orators. The two journalistic styles form a strong contrast. But although Spencer is extreme in his very low degree of accentuation, he agrees with the other scientists in having a predominance of triple feet.

Some illustrations will now be given to show the distinctness with which prose rhythm occurs in different rhythmical types. The first is a sentence from "The Little Minister" in perfect duple rhythm:

"When Gávin cáme to Thrúms, he wás as I am now, for the páges láy befoře him on which he wás to wríte."

The next is a sentence from Macaulay's "Essay on Milton," in which triple rhythm is dominant:

On the rich and the éloquent, on nobles and priests, they looked down with contémp;t; for they esteémed themselves rich in a more précious tréasure and éloquent in a more sublímé lánguage, nobles by the right of an éarlier création and priests by the imposition of a míghtier hánđ.

In the following from Jeremy Taylor there is an alternation of duple and triple:

It bóst the héad and bróke its stálk, and at níght having lóst sóme of its léaves and áll its béauty, it féll into the pórtion of weéds and óutworn fáces.

Finally a passage from the writing of Thompson-Seton is given, arranged as regular blank verse:

So in this land of long, long winter night,
Where nature stints her joys for six hard months,
Then owns her debt and pays it all at once,
The spring is glorious compensation for the past.
Six months' arrears of joy are paid in one
Vast lavish outpour.¹

The Bible is a great treasury of rhythmical English prose. Examples of sentences in perfect triple rhythm, and even regular hexameters, may be found almost anywhere in the book. A few such, from a larger collection, are here given:

How art thou fallen from Heaven, O Lucifer, son of the morning.
Is. 14: :12.

God is gone up with a shout, the Lord with the sound of the trumpet. Ps. 47 : 5.

For the earth shall be filled with the knowledge of the glory of the Lord, as the waters cover the sea. Hab. 2 : 4.

We have eaten and drunk in thy presence and thou hast taught in our streets. Luke 18 : 26.

He looseth the bonds of kings, and girdeth their loins with a girdle. Job 12 : 18.

Mischief shall come upon mischief and rumor shall be upon rumor. Ps. 18 : 15.

Cease then and let me alone that I may take comfort a little. Job 10 : 20.

Be as the sands of the sea which cannot be measured or numbered. Hos. 1: 10.

Wall of the daughter of Zion, let tears run down like a river. Lam. 2 : 18.

A few examples of perfect duple rhythm from the Bible follow:

He casteth forth his ice like morsels,
Who can stand before his cold?
He giveth snow like wool.

Ps. 58.

The sea and all that in them is,
Who keepeth truth forever.

Ps. 146.

Take my yoke upon you and learn of me. Matt. 11 : 29.

Death is swallowed up in victory; O, death where is thy sting?
O, grave where is thy victory." I Cor. xv.

¹ Atlantic Monthly, 90:283.

Division into lines, which present rhythmical units to the eye, is one of the principal distinguishing marks of poetry. But prose has its rhythmical units also. These are not presented to the eye as are the lines of poetry, but the voice in reading calls attention to them by pauses. These phrasal sections are often, but not always, marked out by the punctuation.

The part of the sentence before the copula, the subject, usually forms a phrasal section of the kind here meant, although it is seldom separated by punctuation. The pause after the statement of the subject can be readily perceived in one's own reading. In the preceding sentence, for instance, there seems to the writer a distinct pause before "can." The fact has been verified in a number of examples by having one person read while three others noted the pauses by writing down the words after which they occurred. There is no pause after the subject if the subject is very short, or has been fully suggested in the previous sentence. There is no pause after "He" in the following sentence. "He was always laying himself at the feet of some eminent man." The real subject of a proposition sometimes does not coincide with the grammatical subject. In such cases the position of the pause indicates the true division. In the following sentence, for example, it is after "night," not after "It." "It was a dark night between two sunny days." Compare this with the sentence that succeeds it in Macaulay's text, "The age of the Macenases had passed away," where the pause divides the sentence into equal halves—the subject and the predicate.

Considering the phrasal section in prose as the analogue of the verse in poetry, the question arises whether the phrases within a given piece of prose, like the verses in a poem, display any uniformity of rhythmical structure. To determine this point, twenty of the texts that had been scanned were read again and divided into phrasal sections. The accents in each phrase were then counted. Here is a passage from Macaulay scanned and divided:

What silly things he said | what bitter regrets he provoked | how at one place he was troubled with evil presentiments | which came to nothing | how at another place | on walking from a drunken dog | he read the Prayer-book | and took a hair of the dog that had bitten him | how he went to see men hanged | and came away mud-lined | how he added five hundred pounds to the fortune of one of his babies | because she was not frightened at Johnson's ugly face | etc.

Table IX gives in percentages the number of phrases in each selection that contained one, two, or more accents—as indicated at the head of each column. Decimals have been omitted.

TABLE IX.

(Accents per phrase.)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---------------------------|----|-----|-----|----|----|---|---|---|
| | % | % | % | % | % | % | % | % |
| BARRIE | 6 | 26 | 33 | 23 | 8 | 1 | | |
| KIPLING—I. M. P..... | 8 | 24 | 28 | 21 | 9 | 6 | 1 | |
| HOWELLS'—L. L. H..... | 4 | 20 | 28 | 18 | 12 | 8 | 3 | 2 |
| DICKENS' | 6 | 29 | 31 | 19 | 6 | 4 | 1 | |
| RUSKIN—M. P..... | 4 | 29 | 29 | 16 | 12 | 3 | 2 | 1 |
| MILTON | 11 | 19 | 33 | 22 | 6 | 5 | 1 | |
| BROWNE | 10 | 24 | 44 | 12 | 6 | 1 | | |
| JOHNSON | 7 | 32 | 31 | 19 | 7 | | | |
| DE QUINCEY | 15 | 21 | 29 | 21 | 5 | | | |
| CARLYLE | 22 | 31 | 29 | 11 | 4 | | | |
| MACAULAY | 12 | 23 | 27 | 23 | 7 | 3 | 1 | |
| LAMB—P. R..... | 6 | 28 | 41 | 16 | 2 | 1 | 1 | |
| EMERSON | 7 | 22 | 38 | 18 | 5 | | | |
| HOLMES | 6 | 26 | 26 | 18 | 12 | 3 | 4 | 1 |
| BURKE | 11 | 29 | 26 | 18 | 9 | 1 | 1 | 1 |
| WEBSTER | 8 | 15 | 28 | 20 | 9 | 6 | 1 | 1 |
| INGERSOLL | 21 | 36 | 26 | 10 | 2 | 1 | | |
| <i>Times</i> (Rep.) | 6 | 35 | 32 | 14 | 9 | 1 | | |
| <i>Journal</i> | 22 | 29 | 30 | 10 | 7 | 2 | | |
| W. JAMES | 7 | 21 | 31 | 24 | 9 | 3 | 1 | |
| Averages | 10 | 26 | 33 | 13 | 7 | 3 | 1 | |
| A. D. | | 4.7 | 4.4 | | | | | |

The distributions shown in Table IX are so much alike that we cannot on the strength of them infer distinctive rhythmical types for various selections. There are, however, a few exceptions. Sir Thomas Browne, Lamb and Emerson have phrases with three accents, much above the average. This must be regarded as indicating another rhythmical effect in addition to that discussed in connection with Table I. The figures in Table I were rather disappointing for Browne's style, in view of his great reputation as a writer of rhythmical prose. The figures in Table IX supplement those of Table I and give a more satisfactory explanation of his reputation. Lamb, it is known, modeled his style to a great extent on Browne's. His high percentage in column 3, almost as high as Browne's, seems more than a mere coincidence. In column 2, we notice Ingersoll's and the *Times* reporter's high figures. So far as Ingersoll is concerned, we seem to have a correct register of the short-phrased, staccato style characteristic of him.

We note next that Table IX appears to show a central tendency as

a whole in column 3. The fact is suggestive of Wundt's "Gesetz der drei Stufen."¹ Three accents form a sort of natural unit-group, permitting discrimination of "much," "more" and "most." A German sentence accented and divided by him is of interest. The acute, the grave and the double-acute accents indicate different intensities.

"Als er sich den Vòrwurf | séhr zu Hérzen zu nèhmen schien | | und immer aufs néue bethéuerte | dass er gewiss gern mittheile | gérn für Frèunde thätig sei | | so empfánd sie | dass sie sein zártes Gemüth verlézt habe | und sie fühlte sich als seine Schúldnerin."

Here are a few English sentences from Lamb to illustrate the phrase of three accents, degrees of accent and pause being ignored:

"His dépórtment was of the éssence of grávity | his wórds félw or nóné | and I was nót to make a nóise in his présence."

Áwful idéas of the Tówer | twíned themselves abóut his présence.

A cáptive—a státely béisng | let óut of the Tówer on Sáturdays.

In Wundt's example not only are accents grouped in threes, but also phrases. The single and double bars indicate shorter and longer pauses. There are three long phrases, made up of shorter ones, sometimes three also, in the whole sentence.

The number of phrases per sentence (phrases distinguished, as before said, by sensible pauses) was counted in the selections named in Table IX. A central tendency appeared in only two or three cases. Emerson had 44 per cent. of two-phrased sentences. Burke had 33 per cent. of three-phrased sentences. The frequency of two-phrased sentences in Emerson is probably due to his large proportion of simple sentences.

The question may be raised whether we have a right to speak of the "rhythm" constituted by phrases that are uniform only in respect to the number of accents contained in them, disregarding unaccented syllables. Some answer to this question was given in the early part of the essay. Another, perhaps more forcible one, is, that poetry meant to be and accepted as rhythmical has been in many languages constructed on exactly this principle. The rhythm of the German Nibelungenliel is composed of main accents, the unaccented syllables not being counted. The same principle, besides alliteration and balance, is employed in Old-English poetry. In the earliest Anglo-Saxon manuscripts the lines were written in the same way as in prose, rhythmical divisions being indicated by punctuation. Later, the lines were written as in modern poetry, and half-lines were marked by punctuation; or the half-lines were written one below the other

¹ *Volkerpsychologie*, Theil 1, Bd. 2, S. 391.

as lines. The following from *Piers Plowman* is an illustration, each line as printed being a so-called "half-line":

There preäched a párdoner
As hé a priést were
Bróught forth a búll
With many bíshop's séals.

In hábite as an héremite
Unhóly of wórkes
Went wyde in this wórld
Wóndres to hére.

Each half-line corresponds closely to what has been called above a phrasal section. Each contains two "heavy" words.¹ The "heavy" words of the first half-line are distinguished by an alliterative consonant, which reappears in the "heavy" word of the second half-line. The number of unaccented syllables is disregarded. When many, they are hurried over. We have here a rhythm of main concepts following in approximately equal times. The times are conditioned but not strictly determined by the intervening unaccented syllables.

Most scholars now hold that the ancient Hebrew poets considered only the syllables receiving the accent. The subject has been studied with great care by Sievers, König and others. König points out that the popular poetry heard at the present day in Palestine is also of this character:

"Lines with two, three, four and five accented syllables may be distinguished, between which one to three and even four unaccented syllables may be inserted, the poet being bound by no definite number in his poem. Occasionally two accented syllables are joined. . . . The symmetry and variation being determined by emotion and sentiment."¹

The metrical theory which Coleridge meant to exemplify in "Christabel," was practically the same as that here described. But Coleridge held that, although the number of unaccented syllables might vary, the number of accents must remain the same in every line. Something of the same sort may be seen in Milton's "Samson Agonistes," and Whitman ranges from the strict limits of modern conventional verse to a freedom that is less rhythmical than good prose.

When one considers the comparatively artificial means forced upon poetry for rhythmical purposes, it appears as if rhythm in prose must be a purely accidental effect. A little study will convince us

¹ Skeat, *Introd. to Piers Plowman*. Clarendon Press.

¹ Koenig *Stylistik, Rhetoric, Poetik*, p. 305, 1900.

that prose is not so naive and helpless as we might suppose. It has at command a variety of means for creating rhythm.

There are in the first place short and long words. Table II gave the average word-length in each selection along with the average foot-length. The fact of correlation between the two is apparent. On applying the Pearson formula for the coefficient of correlation we get $r = .76$ —which is high.¹ This means that to a large extent short “feet” go together with short words, and long “feet” with long words.

The correlation, as the coefficient shows, is not perfect. Barrie’s prose has the fewest syllables per word in the table, next to the blank verse of “The Princess.” But his average foot, though short, is not the shortest. Ruskin’s “Modern Painters” comes next in word-length, but is shortest in foot-length. Spencer has both the longest foot-length and word-length. Howells’ L. L. H., Webster, and Huxley’s Preface, on the other hand, which have the same average foot-length, show considerable variety of word-length.

Choice of words is partly dependent on the nature of the subject, but to a large extent it is an outcome of the writer’s personality. It may be wholly a matter of individual taste whether in a certain context one shall write, “man,” “human being,” “gentleman,” “immortal soul,” “old boy,” “chap,” or “fellow.” He may know all these words, but his selection will be dependent on his feelings, his mood and his training.

Flaubert’s maxim, that for every position in a sentence there is but one right word, is a proposition, like the dogma of predestination in general, that cannot be proved or disproved. It is true that having once begun a phrase in a particular way a writer is bound to continue in the same form of construction, and having written one kind of word another of a certain kind is expected to follow. But within these limits his liberty is great. The actually written word holds the field by right of possession, and rarely does a reader take the trouble to re-think the thought in different language. It is the writer’s privilege to express the thought as it is in his own rather than in the reader’s mind. The reader may sometimes say that he himself would not have written so, but he cannot say that the writer has not written what he intended.

Something of the individual liberty of the writer is well illustrated in the following couple of sentences from Thackeray’s “Vanity Fair”:

“Love was Miss Amelia Sedley’s last tutoress, and it was amazing what progress our young lady made under that popular teacher. In

¹ Thorndike, *Mental and Social Measurements*, p. 123, 1904.

the course of fifteen or eighteen months' daily attention to this eminent finishing governess, what a deal of secrets Amelia learned."

There are, no doubt, subtle differences of meaning between "Miss Amelia Sedley," "our young lady" and plain "Amelia"; between "tutorress," "popular teacher" and "eminent finishing governess." But who will say that mere sound did not play an important part in determining the selection of these synonyms? "It sounds better," is a principle of rhetoric often invoked by school-children. Perhaps their reason is more nearly right than their reprobating teachers usually admit. Madame de Stael is said to have taken great pleasure in listening to meaningless verses. "That is what I call poetry," she would say; "it is delicious and so much the more that it does not convey a single idea to me."

Prof. James refers to the uncritical way in which meaningless combinations of words in prose are often read.¹ The illusion of a meaning, he thinks, is due to the correctness of the grammatical structure and to the fact that the words belong to the same special vocabulary, in the same language. A conventional rhythm seems also to contribute to the effect. In the example he quotes from a newspaper reporter: "The birds filled the tree-tops with their morning song, making the air moist, cool and pleasant," it seems that the reporter was bound to have an evenly divided sentence with a rise and a suspension of the voice in the middle. Had he put a full stop after "song," omitted "making" and supplied a copula for his second sentence, he would have written sense, but his tune would have been gone. The presence of the tune induces the reader to overlook such a minor slip as that of bird-songs making the air moist. The three adjectives at the close of the sentence are additional evidence that the writer was being led by a preconceived rhythm.

Arrangement of words is another means of controlling rhythm in prose. The order of words in a sentence is in large measure fixed by the conventionalities of syntax. It is more rigidly prescribed in analytical languages like English and French than in inflectional languages like Greek and Latin. In the former, the order of the words is depended upon to show the grammatical relations, an office that in the latter is performed by word-endings. Transpositions in the inflectional languages produce changes of emphasis without confusing grammatical relations. "Romulus Romam condidit" may be said in six different ways—with every possible transposition of the words. The meaning in each case is clear; the emphasis different. In English the subject of the verb must as a rule precede it in order to be known as the subject.

¹ *Principles of Psychology*, vol. 1, p. 263.

This fixedness of the order of words in English may, however, easily be exaggerated. There is no lack of clearness in this sentence of Carlyle's, "Him Heaven had kneaded of much more potent stuff," nor would there be in a different transposition like, "Of much more potent stuff had Heaven kneaded him." Anthony Trollope writes, "Her it was his custom to visit early in the afternoon"; which might also be written, "To visit her early in the afternoon was his custom," or "His custom was to visit her early in the afternoon."

The general principle underlying the order in which words occur in a sentence is, that the portion of thought most vivid in the speaker's or writer's mind tends to get itself uttered first. The order of words in expression, moreover, tends to conform to the order of perception. "Since it often happens that some striking detail arrests the attention first, while the more important event only shows later, or an obvious effect is more apparent than its hidden cause, so the same order is more effective in language discourse."¹ The instant of conception and utterance is the important moment in expression. Individuality is stamped upon the thought at this moment, and one of the marks of this individuality is the order in which the words are produced.

The importance of the order of words has been recognized by both ancient and modern rhetoricians. Dionysius of Halicarnassus claimed that the choice of words was not of as much importance as their arrangement. The ancients taught that the order of words should be determined by the more or less harmonious collocation of the letters at the end and beginning of words that follow each other, by the rhythmic movement of successive long and short syllables, and by effects of euphony of which the ear alone is competent to judge.²

The nature of the transition from thought to thought has an influence in helping or hindering the rhythm of prose. The reader requires sequence of time in narration, some definite order of space relationship in description, the relation of cause and effect, of subordination and coördination or of unfolding and explanation of concepts. The presence of such clearly perceived ties produces smoothness and easily moving style. Their absence results in incoherency. Ellipses, digressions, collateral ideas check the flow of thought. Rhythm becomes impossible.

Not only in the choice and arrangement of his words and in his method of joining thought with thought has the writer of prose individual liberty, but he may modify the very form and substance of his thought to suit his purpose. It is often a matter of no conse-

¹ Lotze, *Mikr.* Bk. IV, ch. 3. (trans. by Hamilton and Jones, 1886.)

² Weil, "Order of Words," p. 11.

quence to him what the particular character of a proposition in a given place in his discourse shall be. What he is interested in is the further thought to which it leads. It may make no difference to him whether he say, "A full moon shone in the heavens," or "It was a bright moonlight night," or "The earth was suffused with a kind of weak daylight." The point he wishes to make is that a certain thing could be seen. So he attain his end, it does not much matter whether the statement that gets him there be active or passive, literal or figurative, or whether he use one figure rather than another.

In his use of figures he is not, however, free from all limitations, as is often rashly assumed. He must obey certain natural associations. Material images more or less luminous arise spontaneously in the mind with every thought and furnish its vesture.¹ There is no creation of metaphors in good writing; there is but a limited selection.

The true metaphor, which is a naming by one term of two concepts, arises in the mind at the moment of utterance because of a resemblance between the two concepts in some essential particular and an actual blending of the two.² When the poet says, "fear chalked her face," or "I stole from court cat-footed through the town," there has been no deliberate putting together of distinct images. The two ideas came together originally and have not been separated.

Artificial figures affect the sensitive reader as evidence of insincerity. Their use for the sake of rhythm only adds to the impression that there is an attempt at imposition. A writer on nature subjects has the sentence, "All the eastern sky is glowing amber; westward riding high, the moon stares from the empyrean of cold azure washed with silver, a disc of polished brass." We feel pretty sure the writer of that did not see all the images in the relations in which he puts them in his sentence. If he insist that he did, we must conclude that his mind works in ways that are exceptional and abnormal. The particular figure to be used cannot be prescribed or predicted from the outside. There is a large field for individual variation, but the associated images must be recognized as occurring together in some considerable number of human minds. There is no hesitation generally in naming metaphors like "hair shot through with sunset spikes of gold," and lips "with musical curves," false and strained.

¹ Emerson, *Nature*, Chapter II.

² Buck, "Metaphor, a Study in the Psychology of Rhetoric," 1890.

The rhythms that have occupied our attention thus far have been phonetic. Accentual rhythm is indeed the external form of thought rhythm, the significant in thought coinciding with the phonetically accentuated. But there are thought rhythms not so closely connected with sound rhythm. Rhythms of this sort may be called logical. The rhythmical units are thoughts repeated in form or substance, or changing in a regular way. It will be convenient to introduce this part of our subject by reference to a language other than English in which the principles of logical rhythm have been to some extent recognized and formulated.

Biblical scholars have termed the logical rhythm of the Bible "parallelism of members." This is a rhythm over and above that accentual rhythm of the Bible already referred to. The Hebrew text of the Bible is elaborately punctuated to indicate syntactical and logical groupings of words.¹ The characters used for punctuating are called accents, but are rather of the nature of musical notes to guide the public reader. Different degrees of coherence and of separation are indicated by different characters. This system of punctuation was first instituted in the poetical books but was applied later to the prose books also.

The principle of parallelism predominates in the poetical books. The parallelism may be of several kinds. The first and second members may state the same thought in different words; the second member may state a thought antithetical to the first; the second member may echo or supplement the first. The parallelism may also subsist among three members. In such case all three may be coordinate expressions of the same thought, or the last two may supplement the first, or the first two may be coordinate and supplemented by the third. The main divisions in all these cases are indicated by the principal accent or punctuation mark.

Examples of these parallelisms are:

Jehovah, rebuke me not in thine anger ||
Neither chasten me in thy hot displeasure.

A soft answer turneth away wrath ||
But a grievous word bringeth up anger.

Life he asked of thee; thou has given it him: || |
Length of days forever and ever.

They have hands but they handle not |
Fct have they but they walk not ||
Neither speak they through their throat.

¹ Wickes, Accents of the Prose Books of the Bible, 1881.
" " Poetical " " " 1887.

Each member of each group is further subdivided and punctuated to show its syntactical and logical structure. These points of the second order are placed approximately at the phonetic middle of each clause, tending to produce evenly balanced groups of sounds, and in some cases where adherence to the logical grouping of the words would result in an unsymmetrical division, the accent is shifted to a more agreeable position.

In this subdivision of the clauses, phrasal sections are marked out corresponding to the phrasal sections we have already noted in English. The principles of division are similar. When the subject precedes, it is generally marked off from the rest of the sentence:

“And the earth | was waste and void.”

When the object precedes, which implies that it is to be especially emphasized, it is marked off:

“A laughing stock | has God made me.”

Adverbial and prepositional phrases at the beginning of a sentence are set off:

“As for the man | he found no helpmate.”

Turning now to English, we find that balance of clauses and phrases, as it is called, differs from the parallelism of the Bible only in the fact that the principles underlying coordination and subordination of the members in the modern language are of greater subtlety. The relation of part to part is of a more intellectual character; the connecting links are more finely discriminated.

In the “Euphuism” of the sixteenth century, which marks the beginning of the formation of an English prose style¹ parallelism and balance ran riot. Besides alliteration, consonance, rhyme and plays upon words, we find a profusion of twin phrases and parallel clauses, and the most elaborate antithesis of well-balanced sentences. The artificiality of the euphuistic style is what most impresses a modern reader. But the same devices as those employed there may be found more or less in all artistic prose.

We may take for example the first paragraph of Macaulay’s Essay on Boswell’s “Life of Johnson.”¹

“The Life of Johnson is assuredly a great—a very great work. Homer is not more decidedly the first of heroic poets, Shakespeare is not more decidedly the first of dramatists, Demosthenes is not more decidedly the first of orators, than Boswell is the first of biog-

¹ Garnett, “English Prose from Elizabeth to Victoria,” p. 4, 1891.

raphers. He has no second. He has distanced all his competitors so decidedly that it is not worth while to place them. Eclipse is first, and the rest nowhere."

The first sentence contains repetition in the predicate. The rhythm of thought in the second sentence, consisting of clauses of the same form but of different, though analogous, meaning, is obvious. The fourth sentence would in Biblical style be expressed without the correlatives "so—that." These words in the English sentence disguise but do not destroy the parallelism. The fifth sentence is distinctly balanced.

It may be thought that Macaulay is exceptionally fond of these effects. But open a book by a very different sort of writer, at random. Let it be Stevenson's "Amateur Emigrant." The chapter happens to be "Steerage Types." The first sentence of the first paragraph contains repetition of the same part of speech. The second sentence is, "Even in these rags and tatters, the man twinkled all over with impudence like a sham piece of jewelry | and I have heard him offer a situation to one of his fellow passengers with the air of a lord." Here the second member states specifically what the first has expressed in general terms. This corresponds to the form of Biblical parallelism named "synonymous,"

"O Jehovah, my God, thou art very great,
Thou art clothed with honor and majesty."

The third sentence is, "Nothing could overlie such a fellow; | a kind of base success was written on his brow." This is of the same kind as the preceding. The fourth sentence: "He was then in his ill days; | but I can imagine him in Congress with his mouth full of bombast and sawder," is antithetical. The next two sentences are respectively synonymous and antithetical: "As we moved in the same circle, | I was brought necessarily into his society." "I do not think I ever heard him say anything that was true, kind or interesting, | but there was entertainment in the man's demeanor." The last sentence of the paragraph is simple and the only one that does not contain balance or parallelism.

If it be objected that between the members of the parallel clauses that have been cited as examples, a variety of logical relationships may be discriminated, and is, in fact, indicated by the connecting particles, it should be observed that such logical relations exist between the members of the Biblical parallel groups also, although the connecting particles are absent. The explicit statement of the logical relation between consecutive clauses is even in modern English largely a matter of taste with the writer. The essential thing is that the

relation be there. But connectives indicating condition, cause, consequence, etc., are not wholly lacking in Biblical parallelism. Condition, for instance, is expressed in,

“Except Jehovah keep the city,
The watchman waketh but in vain.”

Causal relation is expressed in,

“I have not turned aside from thy judgments,
For thou has taught me.”

In

Thou are my hiding place and my shield
I hope in thy word.”

The causal relation is just as clearly given without a connective.

Repetitions of the same form of phrase with different but allied meaning constitute another order of thought rhythm. A celebrated passage of Burke's will illustrate this:

“Never, never more shall we behold that generous loyalty to rank and sex, that proud submission, that dignified obedience, that subordination of the heart, which kept alive, even in servitude itself, the spirit of an exalted freedom. The unbought grace of life, the cheap defence of nations, the nurse of manly sentiments and heroic enterprise is gone. It is gone, that sensibility of principle, that chastity of honour which felt a stain like a wound, which inspired courage while it mitigated ferocity, which ennobled whatever it touched, and under which vice itself lost half its evil by losing all its grossness.”

The same type of word or word-group recurring—verb, noun, adjective, or noun with adjective—gives another rhythmic effect. The last sentence of Ingersoll's lecture on “Domestic Happiness” may be quoted as an example:

“I would rather have *lived and died unnoticed and unknown*, except by those who loved me, and gone down into the voiceless silence of the *dreamless dust*, than to have been that *imperial impersonation of force and murder* who covered Europe with *blood and tears*.”

Orations are more artificial than other forms of prose. But we find the same kind of rhythm in the quietest sort of writing. Scott, for instance, has:

“The sun was setting upon one of the *rich, glassy glades* of that forest which we have mentioned in the beginning of the chapter. Hundreds of *broad-headed, short-stemmed, wide-branched oaks*,” etc.—“in some places they were intermingled with *beeches, hollies* and *copsewood* of various descriptions so closely as totally to intercept the *level beams* of the *sinking sun*.”

And in the still more placid writing of Howells' “London Films” we have:

"It was having apparently the time of its life, and really the place was enchanting with its *close-cropped, daisy-starred* lawns, and the gay figures of polo players coming home from a *distant field* in the *pale dusk* of a *brilliant day of early June.*"

The rhythm of parallelism may be further seen in proverbs and catch-phrases, which are intended to strike the attention and be remembered. "Man proposes, God disposes." "Words are the counters of the wise and the money of the fools." "Charity creates much of the misery it relieves, but does not relieve all the misery it creates." "The greatest happiness of the greatest number." "High life, below stairs." In all these illustrations, it is evident, phonetic rhythm accompanies thought rhythm at every step.

An attempt has been made to show a characteristic rhythm of judgments for different writers by counting the number of predication in each sentence and finding the average per sentence in a large number of periods.¹ The average of predication per sentence in 500 periods of any author who has "achieved a style," according to Gerwig, is approximately the average of his whole book. He gives a record of his count for 100 representative authors. The figures showing a pretty uniform average of predication per sentence in Macaulay during a long period of years, are here reproduced:

| | Date. | Number of Periods. | Av. Pred. per Period. | Per cent. of Simp. sent. |
|------------------------|-------|--------------------|-----------------------|--------------------------|
| ROYAL SOC. OF LIT..... | 1823 | 100 | 2.03 | 44 |
| DANTE | 1824 | 100 | 2.15 | 38 |
| MILTON | 1825 | 895 | 2.07 | 38 |
| MACHIAVELLI | 1827 | 693 | 1.88 | 47 |
| ESSAY ON HISTORY..... | 1828 | 719 | 2.18 | 40 |
| DRYDEN | 1828 | 100 | 2.65 | 29 |
| D'ARBLAY | 1843 | 918 | 2.31 | 32 |
| ADDISON | 1843 | 1331 | 2.22 | 32 |
| ATTERBURY | 1853 | 240 | 2.35 | 34 |
| BUNYAN | 1854 | 245 | 2.19 | 31 |
| GOLDSMITH | 1856 | 263 | 2.29 | 33 |
| | | | 2.17 | 36 |

Since these figures represent only explicit predication, they do not really give us a census of *judgments* in these works, for there are various ways of expressing a judgment while avoiding explicit predication. A judgment may be uttered in the one word "Rain!" and according to the intonation it may mean, "The rain is falling,"

¹ Gerwig, "On the Decrease of Predication, etc." U. of N. Studies, vol. II, No. 1, 1894.

"The rain will soon fall," "I fear it may rain," etc.¹ Explicit predication may be avoided by the use of absolute constructions—"Caesar having reached the Rubicon"; by appositives—"Caesar, a Roman general"; by conjunctions without copulas—"Caesar was a Roman and the conqueror of Gaul"; by prepositions instead of conjunctions, copulas or conjunctions with copulas—"Caesar was a Roman with few equals in military genius"; by phrases for clauses, by suggestive words for phrases, by present and past participles. A uniform average of predication in successive sections of a prose work, therefore, must be considered as indicating a rhythm composed of judgments, indeed, but not a rhythm formed of all the judgments.

Sherman has found that every writer has a characteristic sentence rhythm throughout his works.² Historically the English sentence has been diminishing in length from the pre-Elizabethan age to the present time. Fabyan, the earliest writer studied, has an average sentence length of 63.02 words; Spenser's average is 49.82; Hooker's, 41.40; Macaulay's, 22.45; Channing's, 25.73; Emerson's, 20.58.

The constancy of the average sentence length in successive sections of a given writer's prose may be seen in the following tables taken from Sherman's "Analytics of Literature."

DE QUINCEY. Average Sentence Length in Words.

| | | | | | |
|------|----------|-------|------|----------|-------|
| 1st | 100..... | 29.74 | 12th | 100..... | 34.42 |
| 2d | "..... | 38.62 | 13th | "..... | 29.57 |
| 3d | "..... | 29.82 | 14th | "..... | 38.58 |
| 4th | "..... | 31.22 | 15th | "..... | 35.32 |
| 5th | "..... | 34.21 | 16th | "..... | 40.29 |
| 6th | "..... | 29.09 | 17th | "..... | 39.29 |
| .7th | "..... | 30.39 | 18th | "..... | 38.12 |
| 8th | "..... | 32.93 | 19th | "..... | 31.24 |
| 9th | "..... | 33.92 | 20th | "..... | 30.76 |
| 10th | "..... | 32.88 | 21st | "..... | 33.57 |
| 11th | "..... | 34.09 | 22d | "..... | 32.09 |

The average of all the periods is 33.25; the mode is about 33.

The averages for each thousand consecutive sentences of Macaulay's "History of England," are as follows:

¹ Ladd, *Psychology. Descriptive and Explanatory*, p. 460, 1894.

² Sherman. *Analytics of Literature*, 1893.

HISTORY OF ENGLAND. Average Sentence Length.

| | | | |
|-------|-------|-------|-------|
| 26.09 | 23.00 | 22.21 | 20.54 |
| 24.21 | 25.33 | 25.06 | 25.01 |
| 24.20 | 21.76 | 22.33 | 24.97 |
| 23.51 | 21.59 | 24.81 | 22.92 |
| 24.09 | 24.10 | 24.05 | 23.71 |
| 22.13 | 19.62 | 21.81 | 23.26 |
| 22.36 | 21.11 | 23.39 | 22.81 |
| 20.85 | 25.58 | 22.39 | 23.91 |
| 21.08 | 25.86 | 23.17 | 24.92 |
| 23.81 | 23.81 | 24.03 | 25.28 |
| — | — | — | — |
| 23.33 | 23.18 | 23.32 | 23.73 |

The variability of the length of the sentence, within each series, however, is great, in modern authors. Macaulay's long sentences are very long. Three consecutive paragraphs taken at random from Newman's "Historical Sketches," show the following sentence lengths:

26 — 41 — 34 — 36 — 19 — 21 — 19 — 18
 28 — 9 — 61 — 40 — 30 — 31 — 37
 45 — 32 — 92

The last four sentences of the first paragraph are so nearly equal in length that they form a rhythmical group. The last sentence seems abnormally long. But such great variability as we see here is more apparent than real, for the position of the full stop is arbitrarily determined. Another writer would be just as likely to make three sentences of that long one, punctuating with periods where Newman uses the colon, semi-colon, and comma with dash. There is good reason, in fact, for considering the paragraph rather than the sentence the true unit of discourse, since the only positive rule for pointing off sentences is to choose the longer breaks in the sense.¹ Statements that would be independent sentences if standing alone are often united into one sentence when they are parts of a paragraph. A writer sees the topics of his discourse as hazy paragraphs, which he proceeds to analyze and define in sentences.

There is in some authors a marked tendency toward uniformity in length of paragraphs. Macaulay was found by Lewis to have the greatest amount of paragraph rhythm. His "History of England" gave the following averages per volume: 258.11, 251.52, 325.44, 336.60, 306.90. Authors of regular methods show a general tendency toward approximate uniformity in the paragraph averages of different sections of their works.

¹ Bain, "English Composition," § 157, 1886.

The foregoing studies of prose rhythm point to the conclusion that style and rhythm in prose are to a very large extent identical. Rhythm in prose plays the same part that voice, gesture and facial expression play in oral speech. And just as we practically never have expressionless speech, so we never have rhythmless or styleless prose.

Writers on Rhetoric differ in their use of the term "style." Spencer, Lewis, and Hodgson, for example, mean by the word simply "the mode of handling language for a purpose, whatever the purpose may be and whatever the occasion."¹ Prof. Genung, on the other hand, speaks of styleless writing and quotes a passage conveying statistical information in illustration.² "I have stated the taxable value of all the property of Texas," it runs, "at six hundred and three millions. Let me enumerate, in round numbers, a few of the items which go to make up that sum. The land is counted at about two hundred and forty-seven millions," etc., etc. It is a dry statement of fact. Nevertheless, it may safely be asserted that few men having the same information to impart would give it in just the same way.

The passage quoted by Prof. Genung was called styleless by him, probably because there is in it a very low degree of emotional excitement. But the writer of the passage evidently takes a stand personally toward his subject when he says "I have stated" and "Let me enumerate." There was no fatal necessity for him to put his sentences in the active rather than the passive voice, or vice versa, or with one end foremost rather than the other, or to use the particular words he uses, or to connect or fail to connect his sentences as he does. Writing that is more than mere cataloguing cannot help having style, though the style may be conventional.

If it be maintained that a manner of writing not sufficiently peculiar to serve to characterize the writer from all other men does not deserve to be called "style," we may reply that of most men the most striking peculiarity is conventionality. Their gait, their gesture, their intonation, and their rhythm are, to the eyes of all but a few friends, conventional.

Style is elevated above conventionality and made individual mainly by the pressure of emotion in the writer, and the natural result of strong emotion is rhythmical expression. Heightened emotional pressure causes repetition of words.³ The machinery of expression becomes inadequate to carry off the excess of matter suddenly crowded upon it. There is temporary damming up of the channels, with

¹ Hodgson, *Outcast Essays and Verse*, p. 220, 1881.

² Genung, *Practical Rhetoric*, p. 13, 1899.

³ Hoeffding, *Vierteljahrsschrift f. Wiss. Phil.*, 1890. XIV, S. 185.

consequent strong out-break, followed by a lull and a repetition of the damming up process.¹ The phenomenon may be likened to the bubbling of water from a narrow-necked bottle. As a result we get expressions that are only excited stuttering like "No, no, no, no!" rhetorical explosions like the classical, "Abiit, excessit, evasit, erupit," Chatham's "I am astonished, I am shocked to hear such principles confessed, to hear them avowed in this house and in this country," and the more complex rhythms of poetry and prose.

The effect of rhythm in language is to lock the parts together into a unity and thus to facilitate comprehension. It economizes attention, for it assists the reader in putting emphasis where it is due. It is often found that writers who are difficult to read become easy after they have been heard in oral discourse. Their peculiar mode of vocal accentuation is imperfectly suggested in their writing, but the voice once having been heard, its remembered rhythm thereafter guides the reader. The experience here referred to is especially common with writing in foreign languages.

The need of having the "swing" of a sentence in order to understand it may be illustrated by an example. Ask someone to read the following sentence aloud without previous examination: "Now, any fact, whether of arithmetic, or geography, or grammar, which is not led up to and into out of something which has previously occupied a significant position in the child's life for its own sake, is forced into this position."² The half dozen particles, "up, to, and, into, out, of," coming together usually cause a halt or a stumble. But as soon as it becomes clear that the accents are on "up," "in," and "out," there is no difficulty in reading and understanding the sentence.

Spencer has suggested that the excellence of a style might be measured by the rate of a reader's comprehension. The rate of comprehension, again, it would seem, should be shown by the speed with which a piece of writing is read aloud. A few tests of this kind were made by the writer, as follows:

"Sesame and Lilies," "Red Rover," the "Essay on Boswell," "Modern Painters," and "The Old Pacific Capital," have different rhythms as indicated in Tables I and II. "Red Rover" is least rhythmical, "Old Pacific Capital," most. "Sesame and Lilies" is less rhythmical than "Modern Painters." The predominant rhythm of "Old Pacific

¹ Spencer, First Principles, Chapter: Rhythm of Motion.

² Dewey: The Child and the Curriculum; Contrib. to Ed. v. Chicago, p. 32, 1902.

Capital" is duple; in "Red Rover" and "Essay on Boswell" it is triple. "Modern Painters" is more duple than "Sesame and Lilies" and has less long feet.

About 500 words of each of these selections were read aloud by (J) at a rate of speed which he was told to make as nearly as possible normal; that is, natural or easy. He was timed with a stop-watch. The figures in the table are calculated for exactly 500 words.

J. (Reading aloud.)

| | | | | |
|---------------|---|-------|------|------|
| S. & L..... | 2 | min., | 57.1 | sec. |
| R. R. | 2 | " | 46.4 | " |
| E. o. B. | 2 | " | 31.8 | " |
| M. P. | 2 | " | 36.4 | " |
| O. P. C. | 2 | " | 28 | " |

The same selections were read by (F), and as there seemed to be a tendency to read the later selections faster, the last two were changed about.

F. (Reading aloud.)

| | | | | |
|---------------|---|-------|------|------|
| S. & L..... | 3 | min., | 1.2 | sec. |
| R. R. | 2 | " | 47 | " |
| E. o. B. | 2 | " | 36.6 | " |
| O. P. C. | 2 | " | 32.9 | " |
| M. P. | 2 | " | 36.4 | " |

After reading them all (F.) read S. & L., again, in

2 min., 43.7 sec.

It appears from these tests that "Sesame and Lilies" with its long feet and irregular movement was read more slowly than "Modern Painters" with its great amount of duple rhythm. Stevenson's style, so often referred to as "light," appears literally to go quickly.

The three Kipling stories were tested in the same way. These differ according to Tables I and II, "In the Matter of a Private" containing the greatest amount of duple rhythm, "The Man Who Was" the least. The readers were (A. L.), (B.) and (L.).

| | A. L. | B. | L. |
|--------------|-------------|-------------|-------------|
| I. M. P..... | 151.09 sec. | 154.05 sec. | 169.95 sec. |
| I. K. M..... | 152.83 " | 156.85 " | 165.95 " |
| M. W. W..... | 100.60 " | 160.60 " | 170.50 " |

"The Man Who Was" was read slowest by all three. "In the Matter of a Private" was read quickest by two. The results from

this test agree, on the whole, with those from the reading of (J.) and (F.) in indicating that duple rhythm moves faster than other rhythms, and that much rhythm conduces to speed in reading.

Strongly marked rhythm, as it is an outcome of emotion, also stirs up feeling in the reader or listener. Just as a loud cry suggests the emotional state of the one who utters it, so marked rhythm in language implying that speech is going on under high emotional pressure, immediately excites an interest in the emotion-arousing thought. The rhythmically expressed thought gets a hearing, for those to whom it is addressed share in anticipation the excitement of the thinker.

Rhythmless writing is even more difficult to find than styleless writing, for thought is by its nature rhythmical and so must its expression be. "Like a bird's life it seems to be made of an alternation of flights and perchings. The rhythm of language expresses this, where every thought is expressed in a sentence and every sentence closed by a period."¹ Children just beginning to write articulately, necessarily fall into such a simple sentence rhythm. "Dear Uncle —," writes a six-year-old, "It made me happy to receive your letter. This afternoon I was going to pick some violets for you but it rained. I have a surprise to tell you when you come. Father was down west last week. He was away a long time. Can you come soon. I have another surprise for you for supper. It made me smile too when mother read your letter." The rhythm here is, indeed, fragmentary, rudimentary and disturbed as compared with that displayed by a mature writer.

As an illustration of weak rhythm the following sentence by Addison may be taken: "In the next place we may observe that where the words are not monosyllables, we often make them so, as much as lies in our power, by our rapidity of pronunciation." The words that have to be accented in this sentence are mainly poor in content—they add little to what is already in the mind. In the clause, "we often make them so as much as lies in our power," the only words unmistakably requiring an accent are "make" and "power;" the rest is rhythmically structureless. It is, of course, possible with a little distortion of the natural mode of reading to accent other words, but the effect is disagreeable, for the mind abhors a vacuum. Unrhythmical writing is loose and undecided. Rhythmical writing implies a consciousness of one's purpose and a mastery of one's meanings.

This brings us to another condition of rhythmical writing,—the

¹ James, *Principles of Psychology*, vol. 1, p. 243.

possession by the writer of a complex thought as a whole. There can be only the crudest and most elementary sort of rhythm in the writing of one whose thought comes in driblets. A complex thought grasped as a unit is, in fact, another aspect of that which was referred to above as pressure of emotion. The pent-up energy that issues in repetitions, parallelisms, balance, etc., also produces phonetic rhythm, for there is an impatience in that state of mind of insignificant words. Accents then follow one another unerringly and there is no vacillation or ambiguity.

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